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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR   | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|------------------------|---------------------|------------------|
| 10/586,834   | 07/19/2006  | Matthew Conrad Fellers | DOL12401 US         | 8900             |
| 88862  | 7590        | 09/24/2009             | EXAMINER            |                  |
| Dolby Laboratories Inc.<br>999 Brannan Street<br>San Francisco, CA 94103 |             |                        | HE, JIALONG         |                  |
|  |             |                        | ART UNIT            | PAPER NUMBER     |
|  |             |                        | 2626                |                  |
|  |             |                        | NOTIFICATION DATE   | DELIVERY MODE    |
|  |             |                        | 09/24/2009          | ELECTRONIC       |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@dolby.com  
mguo@dolby.com

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/586,834 | <b>Applicant(s)</b><br>FELLERS ET AL. |  |
|                              | <b>Examiner</b><br>JIALONG HE        | <b>Art Unit</b><br>2626               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Priority***

1. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 05/14/2007 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 19-27 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention.

Claim 19 recites "A medium conveying a program of instruction...". While the instant claim(s) are directed to a medium. Normally, the claims would be statutory. However, the specification defines a machine readable medium includes signal or carrier wave (specification , page 15, lines 19-23, "a variety of machine readable media such as baseband or modulated communication paths throughout the spectrum from

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supersonic to ultraviolet frequencies"). A signal is not a process, machine, manufacture, or composition of matter (In Re Nuijten, Fed. Cir. 2007). Rather, a signal is a form of energy, in the absence of any physical structure or tangible material. The full scope of the claims as properly read in light of the disclosure encompasses non-statutory subject matter, the claims as a whole would be non-statutory. It is suggested to amended the claims to include only computer readable storage media as discloses in the specification.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claim 1, line 6, recites "each set in a plurality of sets of groups of the blocks" and line 16 recites "an associated set of one or more control parameters". It appears that "**each set**" in line 6 means a group of blocks, while "**an associated set**" in line 16 means a number of control parameters. It is very confusing to use the same word "set" to mean different things. This confusion is further evidenced by dependent claims. For example, claim 5, which depends on claim 1, line 4 recites "in the affiliated

set according to the associated set of control parameters". It is unclear what this limitation means.

Independent claims 10 and 19 recite similar features as claim 1 explained above, and dependent claims depend on their respective independent claims and include above underlined limitations. Therefore, claims 2-27 are rejected.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Youn (US Pat. 7,283,968, hereinafter referred to as Youn).

Regarding claims 1, 10 and 19, Youn discloses a method, apparatus and medium (**col. 11, lines 10-12, computer readable medium**) for processing blocks of audio information arranged in frames, each block having content representing a respective time interval of audio information (**Youn's method is about AAC coding in**

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**which audio information is arranged in frames and blocks**), wherein the method comprises:

- (a) receiving an input signal conveying the blocks of audio information (**col. 2, lines 23-25, a short window type, 8 successive blocks**);
- (b) obtaining two or more measures of quality (**col. 2, line 6, distortion level for the frame, line 11, perceptual entropy**) such that: (1) each set in a plurality of sets of groups of the blocks in a respective frame has an associated measure of quality (**col. 8, line 12-14, the type of a short window is determined based on the energy associated with this window**), (2) each group has one or more blocks (**col. 2, lines 27-28, each group includes one or more successive short windows (blocks)**), (3) each set of groups includes all blocks in the respective frame and no block is included in more than one group in each set (**fig. 10**), and (4) the measure of quality represents excellence in results obtainable by processing each block in a respective group according to an associated set of one or more control parameters (**col. 8, lines 62-65, the final grouping is done in such a way as to have a group number (one or more control parameters) that enable balance between the coding efficiency and the sound quality**);
- (c) analyzing the measures of quality to identify a selected set of groups having a minimum number of groups such that a measure of processing performance obtained at least in part from the associated measure of quality is higher than a threshold (**col. 7, lines 33-39, col. 8, lines 43-58**); and

(d) processing each group of blocks in the selected set of groups according to the associated set of one or more control parameters to generate an output signal representing contents of the input signal and representing the associated set of control parameters for each group in the selected set (**fig. 6 and 9 and associate disclosure**).

Regarding claims 2, 11 and 20, Youn further discloses the blocks comprise time-domain samples of audio information (**col. 2, line 2 the time-domain audio data**).

Regarding claims 3, 12 and 21, Youn further discloses the blocks comprise frequency-domain coefficients of audio information (**col. 1, line 47-48, the audio signal is mapped into the frequency domain**).

Regarding claims 4, 13 and 22, Youn further discloses at least one pair of blocks in the groups having more than one block have content representing audio information in time intervals that are adjacent to one another or overlap one another (**col. 2, each group includes one or more successive short windows (adjacent), also fig. 10**).

Regarding claims 5, 14 and 23, Youn further discloses obtaining two or more measures of cost, each measure of cost affiliated with a set of groups of blocks, wherein the measure of cost represents an amount of resources needed to process the blocks in the affiliated set according to the associated set of control parameters; wherein the measure of processing performance is obtained in part from the measure of cost

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affiliated with the selected set (**col. 7, line 64 - col. 7, line 59, side information** (measures of cost)).

Regarding claims 6, 15 and 24, Youn further discloses the analyzing is performed in one or more iterations of an iterative process to determine one or more sets of groups that are not candidates for the selected set and excludes analyzing these one or more sets in subsequent iterations of the process (**fig. 9 and associated disclosure**).

Regarding claims 7, 16 and 25, Youn further discloses the selected set is identified by an iterative process that comprises:

determining a second measure of processing performance for pairs of groups in an initial set of groups (**fig. 9, #902, length** (a second measure));

merging the pair of groups having a highest second measure of processing performance to form a revised set of groups provided that the highest second measure of processing performance is greater than a threshold, and determining the second measure of processing performance for pairs of groups in the revised set of groups (**fig. 9, #916-#922**); and

continuing the merging until no pair of groups in the revised set of groups has a second measure of processing performance that is greater than the threshold, wherein the revised set of groups is the selected set (**fig. 9, #918-#922**).



Regarding claims 8, 17 and 26, Youn further discloses the measures of cost are responsive to amounts of data needed to represent the sets of control parameters in the encoded signal (**col. 4, lines 3-4, side information** (the measures of cost) **depends on the number of groups** (control parameters)).

Regarding claims 9, 18 and 27, Youn further discloses the measures of cost are responsive to amounts of computational resources needed to process the blocks of audio information (**col. 4, lines 3-4, the amount of side information** (the measures of cost) **associated with short window, the scalefactor for which is the same, different block grouping schemes generate different coding bit streams** (amounts of computational resources needed), **therefore different side information**).

9. Claims 1-6, 8-15, 17-24 and 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Araki (US Pat. 6,456,963, Applicant's IDS, hereinafter referred to as Araki).

Regarding claims 1, 10 and 19, Araki discloses a method, apparatus and medium for processing blocks of audio information arranged in frames, each block having content representing a respective time interval of audio information (**Araki's method is about AAC coding in which audio information is arranged in frames and blocks**), wherein the method comprises:

(a) receiving an input signal conveying the blocks of audio information (**col. 3, lines 9-12**);

(b) obtaining two or more measures of quality (**col. 4, line 51, distortion level, line 64, perceptual entropy**) such that: (1) each set in a plurality of sets of groups of the blocks in a respective frame has an associated measure of quality (**col. 3, lines 52-col. 4, 65**), (2) each group has one or more blocks (**col. 3, lines 26-30m also fig. 6**), (3) each set of groups includes all blocks in the respective frame and no block is included in more than one group in each set (**fig. 6**), and (4) the measure of quality represents excellence in results obtainable by processing each block in a respective group according to an associated set of one or more control parameters (**col. 6, lines 7-9, perceptual entropy**);

(c) analyzing the measures of quality to identify a selected set of groups having a minimum number of groups such that a measure of processing performance obtained at least in part from the associated measure of quality is higher than a threshold (**col. 6, lines 30-40**); and

(d) processing each group of blocks in the selected set of groups according to the associated set of one or more control parameters to generate an output signal representing contents of the input signal and representing the associated set of control parameters for each group in the selected set (**col. 3, lines 26-51**).

Regarding claims 2, 11 and 20, Araki further discloses the blocks comprise time-domain samples of audio information (**fig. 5**).

Regarding claims 3, 12 and 21, Araki further discloses the blocks comprise frequency-domain coefficients of audio information (**col. 5, lines 54-60**).

Regarding claims 4, 13 and 22, Araki further discloses at least one pair of blocks in the groups having more than one block have content representing audio information in time intervals that are adjacent to one another or overlap one another (**col. 2, lines 20-21, fig. 6**).

Regarding claims 5, 14 and 23, Araki further discloses obtaining two or more measures of cost, each measure of cost affiliated with a set of groups of blocks, wherein the measure of cost represents an amount of resources needed to process the blocks in the affiliated set according to the associated set of control parameters; wherein the measure of processing performance is obtained in part from the measure of cost affiliated with the selected set (**col. 5, lines 48-67, col. 3, line 26-50, scalefactor (measure of cost) for each block**).

Regarding claims 6, 15 and 24, Araki further discloses the analyzing is performed in one or more iterations of an iterative process to determine one or more sets of groups that are not candidates for the selected set and excludes analyzing these one or more sets in subsequent iterations of the process (**fig. 8a**).

Regarding claims 8, 17 and 26, Araki further discloses the measures of cost are responsive to amounts of data needed to represent the sets of control parameters in the encoded signal (**col. 3, lines 45-50, number of scalefactor (measure of cost) to be encoded depends on the number of blocks in a group** (control parameters)).

Regarding claims 9, 18 and 27, Araki further discloses the measures of cost are responsive to amounts of computational resources needed to process the blocks of audio information (**col. 3, lines 45-50, number of scalefactor (measure of cost) to be encoded depends on the blocks in a group** (need different amounts of memory and CPU time)).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

\* Budnikov, Dmitry N. (US 20030215013 A1) - audio encoder with adaptive short window grouping.

\* Chen; Wei-ge et al. (US 6300888 B1) - entropy code mode switching for frequency-domain audio coding.

\* Li, Jin (US 20030187634 A1) - system and method for embedded audio coding with implicit auditory masking.

\* Nishio, Kosuke et al. (US 20030088423 A1) - encoding device and decoding device.

\* Fielder; Louis D. et al. (US 5109417 A) - low bit rate transform coder, decoder, and encoder/decoder for high-quality audio.

\* Miseki; Kimio et al. (US 6167375 A) - method for encoding and decoding a speech signal including background noise.

\* Grant Davodspm. ("Digital Audio Coding: Dolby AC-3", 1999) – An introduction to AC-3 audio coding.

\* Danetijel Domazet et al. ("Advanced software implementation of MPEG-4 AAC audio encoder", 2003) – An implementation of MPEG-4 AAC.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JIALONG HE whose telephone number is (571) 270-5359. The examiner can normally be reached on Monday-Thursday, 7:00AM-4:30PM, ALT. Fridays, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571)272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JH/

/Richemond Dorvil/  
Supervisory Patent Examiner, Art Unit 2626